

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number
WO 2005/058463 A1

(51) International Patent Classification⁷: **B01D 61/56**,
35/06, C02F 1/469

(21) International Application Number:
PCT/GB2004/005442

(22) International Filing Date:
20 December 2004 (20.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0329546.6 19 December 2003 (19.12.2003) GB

(71) Applicant (for all designated States except US): **ELECTROKINETIC LIMITED** [GB/GB]; Nanotechnology Centre, Herschel Building, Newcastle University, Newcastle Upon Tyne NE1 7RU (GB).

(72) Inventors; and

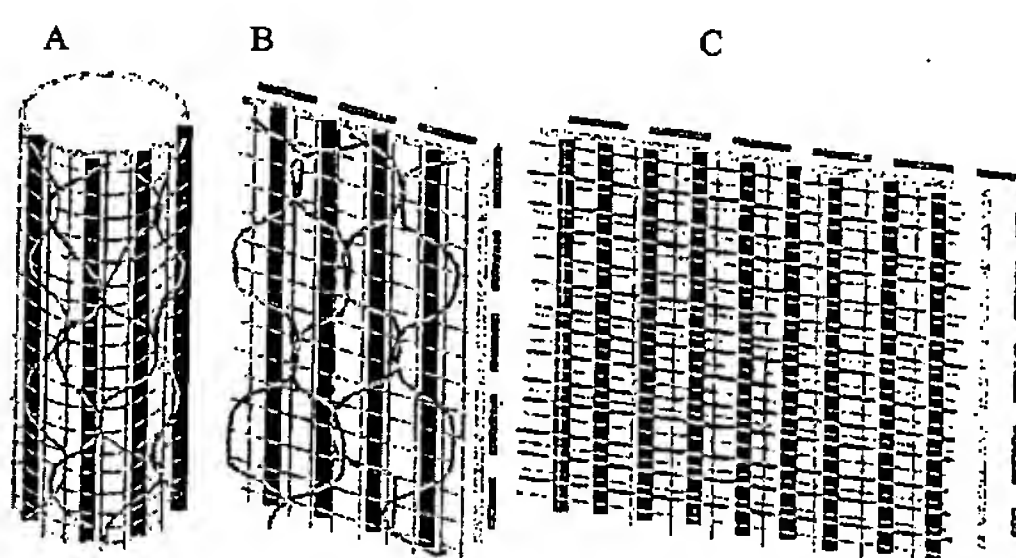
(75) Inventors/Applicants (for US only): **JONES, Colin, John, Francis, Philip** [GB/GB]; 116 The Mount, York YO24 1AS (GB). **LAMONT-BLACK, John** [GB/GB]; 5 Archibald Street, Gosforth, Newcastle Upon Tyne NE3 1EB (GB). **GLENDINNING, Stephanie** [GB/GB]; 10 Lucombe Close, Biddick Woods, Houghton-Le-Spring, Tyne & Wear DH4 7T (GB). **FOURIE, Andrew** [ZA/ZA]; 21 Cardiff Road, Parkwood, 2193 Johannesburg (ZA).

(74) Agent: **NOVAGRAAF PATENTS LIMITED**; The Crescent, 54 Blossom Street, York YO24 1AP (GB).

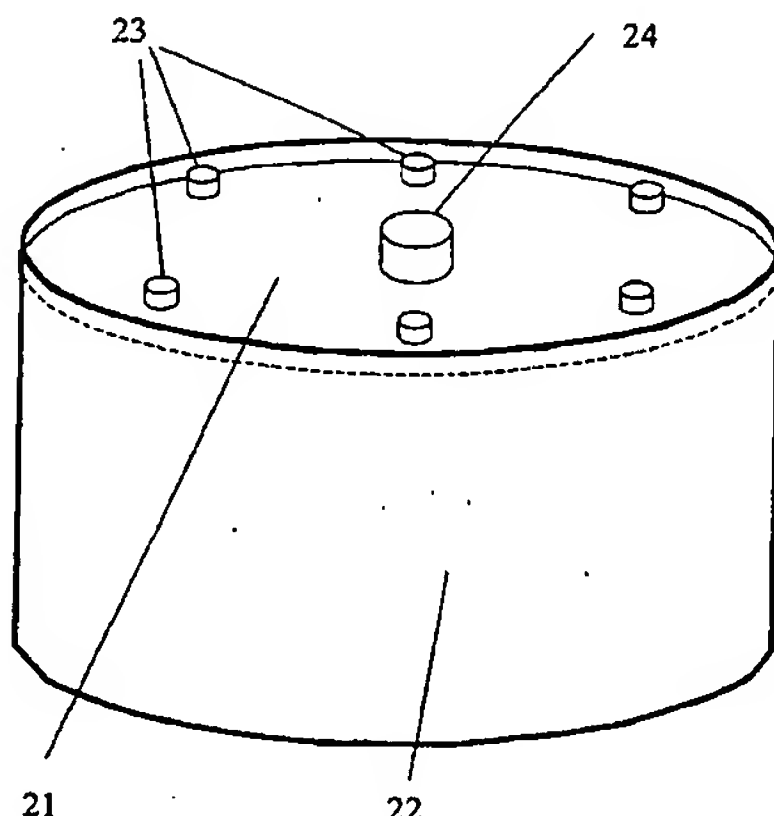
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

[Continued on next page]

(54) Title: WASTE AND TAILINGS DEWATERING TREATMENT SYSTEM AND METHOD



11
12
13
14



(57) Abstract: An apparatus and method are described for reducing the liquid content of a material comprising a particulate/liquid dispersion or suspension, in particular comprising a dispersion or suspension of inorganic particles being a byproduct of mining, manufacturing or other industrial processes. The apparatus comprising a receiving zone to contain the material, at least one pair of electrodes spaced apart within the receiving zone, means to apply a potential difference thereacross and hence across the material in use to drive electrokinetic dewatering, and drainage means to enable removal of water, wherein at least one of the electrodes comprises a textile or other synthetic material at least in part associated with a conductor so as to constitute where so associated a conducting electrokinetic textile or other synthetic material. The method makes use of the apparatus, in situ or at a remote site either as a batch or continuous process.

WO 2005/058463 A1



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.